Organic and Biomolecular Chemistry 2011 vol.9 N9, pages 3225-3234

P-tert-Butyl thiacalix[4]arenes functionalized at the lower rim by amide, hydroxyl and ester groups as anion receptors

Stoikov I., Yantemirova A., Nosov R., Rizvanov I., Julmetov A., Klochkov V., Antipin I., Konovalov A., Zharov I.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

New p-tert-butyl thiacalix[4]arenes differently substituted at the lower rim with amide, hydroxyl and ester groups were synthesized. Binding properties of the compounds toward some tetrabutylammonium salts n-Bu4NX (X = F-, Cl-, Br-, I-, CH 3CO2 -, H2PO4 -, NO3 -) were studied by UV spectroscopy. It was found that the stoichiometry of the complexes, generally, is 1:1, and the association constants are in the range of 103-105 M-1. The p-tert-butyl thiacalix[4]arenes containing secondary amide groups trisubstituted at the lower rim bind the studied anions most effectively. Selective receptors for fluoride and dihydrogen phosphate salts of tetrabutylammonium were found.

http://dx.doi.org/10.1039/c0ob01251c